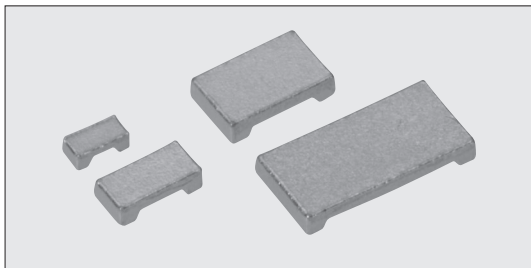


# JUMPER (Metal Plate)

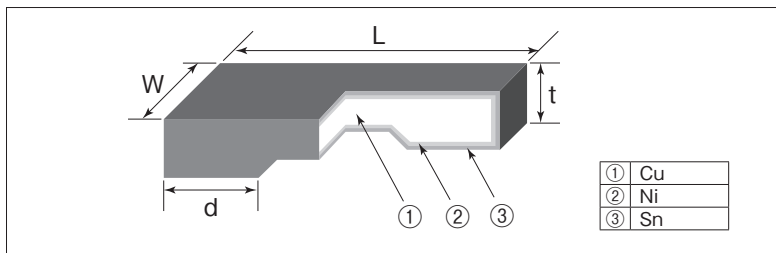


## TLRZ Metal Plate Chip Type Jumper

Current Sensing Resistors



### Construction



### Features

- SMD type of small size, high rated current jumper.
- Low height suitable of use of Small equipment such as mobile phone.
- Suitable for reflow soldering. (Not suitable for flow soldering.)
- AEC-Q200 Tested.
- Products meet EU-RoHS requirements.

### Applications

- Mobile phones, PDAs, Media players, Computers etc.

### Reference Standards

IEC 60115-1  
JIS C 5201-1

### Dimensions

Type (Inch Size Code)	Dimensions (mm)				Weight(g) (1000pcs)
	L	W	d	t	
1E (0402)	1.0±0.1	0.5±0.1	0.2±0.1	0.4±0.05	1.1
1J (0603)	1.6±0.1	0.8±0.1	0.3±0.1	0.5±0.05	4.6
2A (0805)	2.0±0.1	1.25±0.1			8.9
2B (1206)	3.2±0.1	1.6±0.1			15.3

### Type Designation

Example

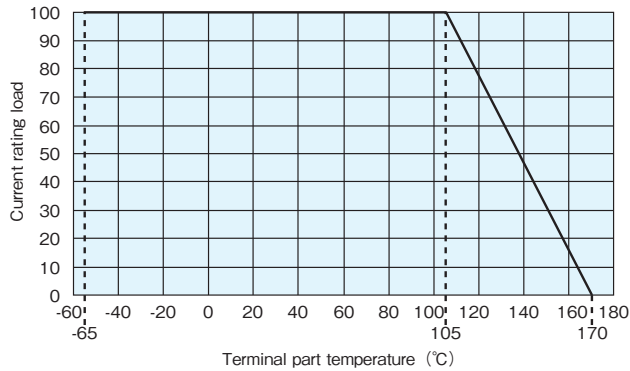
TLRZ	1J	T	TD
Product Code	Current Rating	Terminal Surface Material	Taping
	1E : 10A 1J : 26A 2A : 31.6A 2B : 50A	T : Sn	TB : 2mm pitch press paper TD : 4mm pitch punch paper BK : Bulk

Contact us when you have control request for environmental hazardous material other than the substance specified by EU-RoHS.  
For further information on taping, please refer to APPENDIX C on the back pages.

### Ratings

Type	Resistance	Current Rating	Rated Terminal Part Temp.	Operating Temp. Range	Taping & Q'ty/Reel (pcs)	
					TB	TD
TLRZ 1E	0.2mΩ max.	10A	+105°C and less	-65°C~+170°C	10,000	—
TLRZ 1J		26A			—	5,000
TLRZ 2A		31.6A				
TLRZ 2B		50A				

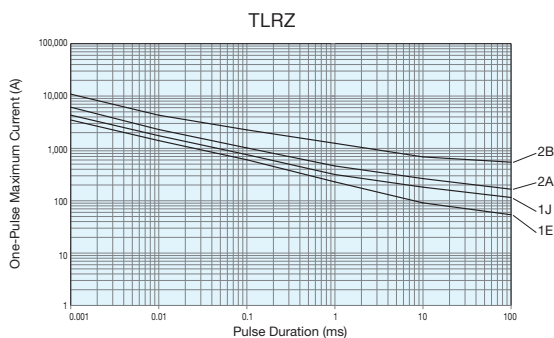
## Derating Curve



When the terminal part temperature of the jumper exceeds the rated terminal part temperature shown above, the power shall be derated according to the derating curve.  
 ※Please refer to "Introduction of the derating curves based on the terminal part temperature" on the beginning of our catalog before use.

## One-Pulse Maximum Current

Please ask us about the resistance characteristic of continuous applied pulse.  
 The pulse endurance values are not assured values,so be sure to check the products on actual equipment when you use them.



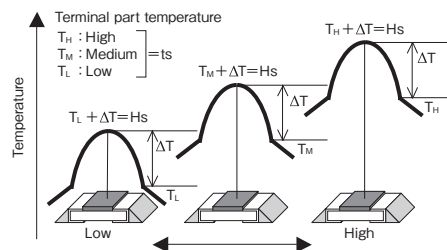
## Thermal Resistance

Type	Size	Rth
TLRZ	1E	<0.5°C/W
	1J	
	2A	
	2B	

$$R_{th} = (H_s - t_s) / \text{Power}$$

Regarding the temperature rise, the value of the temperature varies per conditions and board for use since the temperature is measured under our measuring conditions. Please refer to us before use.

The temperature of the resistor will increase the same  $\Delta T$  from the standard terminal part temperature regardless of the ambient temperature when the same power is applied. This is because there is hardly any heat dissipation from the resistor surface to the ambient air.



## Performance

Test Items	Performance Requirements $\Delta R\%$		Test Methods
	Limit	Typical	
Resistance			25°C
Overload (Short time)			1E : 20A, 1J/2A : 40A, 2B : 80A, 5s
Resistance to soldering heat			260°C ± 5°C, 10~12s
Rapid change of temperature			-55°C (30min.) ~ +155°C (30min.) 1000 cycles
Moisture resistance	MAX 0.5mΩ 1E MAX 0.2mΩ 1J/2A/2B	MAX 0.25mΩ 1E MAX 0.15mΩ 1J/2A/2B	85°C, 85%RH, 1E : 1A, 1J/2A : 2A, 2B : 4A, 1000h
Endurance of rated terminal part temperature			Terminal part temp. : 105°C, 1000h, 1.5h ON/0.5h OFF cycle
Low temperature exposure			-65°C, 1000h
High temperature exposure			170°C, 1000h

## Precautions for Use

- In case of using the low ohm resistors as shunt resistors, please lay out a pattern considering the electromagnetic induction with surrounding inductors.
- For resistance values of TLRZ the resistance value after soldering may change depending on the size of pad pattern or solder amount.  
 Make sure the effect of decline/increase of resistance value before designing.